LOMANDRA TROPICA (XANTHORRHOEACEAE*) A NEW SPECIES FROM NORTHERN AUSTRALIA

ALMA T. LEE

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ABSTRACT

Lee, Alma T. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, Australia 2000) 1980. Lomandra tropica (*Xanthorrhoeaceae*)—*a new species from northern Australia. Telopea 2 (1): 49–53.*—*L. tropica*, with subspecies *tropica* and *arnhemica*, closely related to the *L. glauca* group (Section *Cephalogyne*), is described. The species extends from the Kimberley region of Western Australia to the Arnhem coast of Northern Territory.

Recent collecting in less accessible parts of northern Australia has clarified the identity of two old and previously puzzling specimens at NSW. One of the latter is almost certainly (? a part of) the collection recorded as *Xerotes elongata* by Fitzgerald (1916/17: 127) in Botany of the Kimberleys [it bears a recognized Fitzgerald field label, a stamp: 'received 22.9.1910', the name '*Xerotes elongata*', and 'loc . . . W.A.']. The second specimen is undoubtedly (? a part of) the material on which Mueller (1892: 475) based his record of "*Xerotes Brownii*" F.v.M. from "Welcome Creek" [its blue Phytologic Museum of Melbourne label has '*Xerotes Brownii*, Welcome Creek, *Bradshaw & Allen*, 1891'; the specimen, presented by the Linnean Society of New South Wales, reached NSW on 7.11.1924. Mr Joseph Bradshaw organised the expedition, to the Prince Regent River, and Allen was the collector].

It is now clear that these two specimens, their corresponding records, and the recent collections are all referable to a tropical taxon closely related to *L. glauca*. More than twenty collections were available for study, and the nature and range of the taxon are becoming evident. It is manifestly a part of the *L. glauca* group of species and is divisible into two subspecies. Some specimens of the eastern race are scarcely separable from *L. glauca* subsp. *collina*, though the larger leaves of the western subspecies distinguish it readily from the latter taxon. The distinctions (from *L. glauca*) common to both subspecies are few and somewhat esoteric, but, together with the great spatial disjunction from all other parts of the complex, make treatment at species level appropriate. Moreover, recognition of the two geographic races as subspecies in *L. tropica* is compatible with the infraspecific division adopted in *L. glauca*.

Lomandra tropica *A. Lee*, **sp. nov.**

Species duarum subspecierum affinis *L. glaucae* praesertim subsp. *collinae*, sed floribus masculis flavis postea denigricantibus et foliis plerumque longioribus et plus complanatis; autumno florens.

Caules caespitosi sed quisque ad c. 10 cm extendens; folia glauca plana ad concavo-convexa (19–) 25–45 (–55) cm longa, 0.3–3.5 mm lata, tenuissima in regionibus orientalibus, latiora occidentalibus, apice acuta vel acuminata, margine laevia vel scabridiuscula. Foliorum basium margines membranacei sursum gradatim angustiores, mox in fibras pallidas lacerati. Flores feminei in capitulo fere sessile, ad 1.5 cm diam. Inflorescentia mascula cum pedunculo ad 25 cm longa, ramis pluribus, floribus in fasciculis sessilibus.

* The Family to which *Lomandra* and related genera should be referred has been and is still the subject of investigation. Its placement here, in Xanthorrhoeaceae, follows the system adopted in NSW and is not an expression of informed opinion. A summary of treatments accorded these genera (tribe *Xeroteae* Bentham), as a result of special-discipline investigations, is given in Stevens (1978).

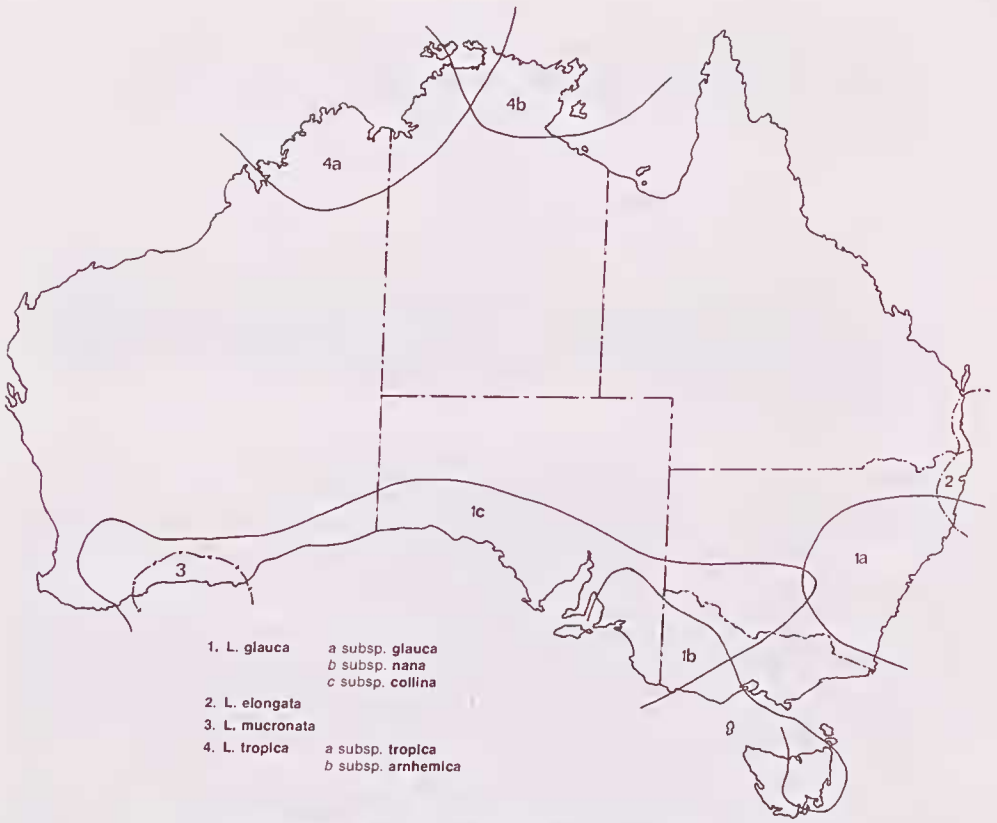

Fig. 1. Distribution of *L. tropica* and the *L. glauca* group.

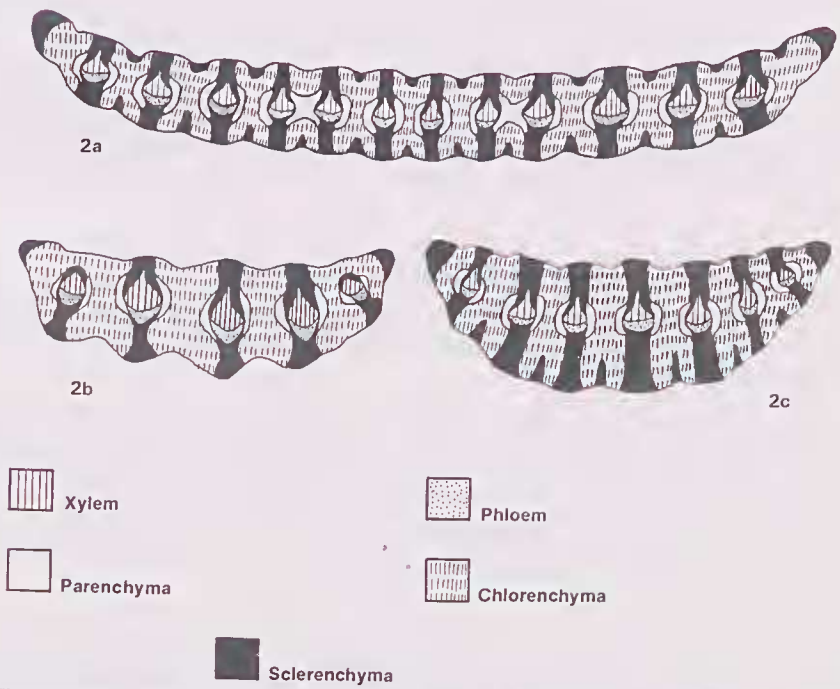

Fig. 2. Transverse section of leaf—2a *L. tropica* subsp. *tropica*, × c. 60; 2b subsp. *arnhemica* (an exceptionally narrow leaf), × c. 250; 2c *L. glauca* subsp. *collina*, × c. 150.

HOLOTYPE: WESTERN AUSTRALIA: **Northern Province—Gardner***: Welcome Creek [vicinity of Prince Regent R.], *Bradshaw & Allen NSW 50574*, 1891 (NSW ♂).

Perennial tussocky plants branching near ground level, the individual shoots of the clump less than 1 cm in diameter, often 6–8 mm, commonly extending to 8–12 cm in length. *Leaves* glaucous, drying pale green or greyish green, narrow-linear (19–) 25–45 (–55) cm long, from 0.3 mm broad (in eastern parts of the range) to 3.5 mm (in western parts), flat when wider or slightly concavo-convex when very narrow, the margins minutely scabrid or quite smooth, the apex acute to acuminate with an apical triangle 1–3 (–4) mm high [see Lee (1972: 253, Fig. 1)]; membranous margins of the leaf bases pale or with some rusty coloration, gradually narrowed upwards, at first intact then finely lacerate (as in *L. glauca* subsp. *collina*). *Male inflorescence* several-branched with sessile flower clusters, its peduncle with rare exceptions clearly exposed above the leaf bases (by up to 12 cm) and slightly flattened; *female inflorescence* capitate, c. 1.5 cm in diameter, the peduncle short and scarcely exposed above the leaf bases. *Male flowers* yellow at first, later purplish black, c. 2 mm long, the perianth segments joined for half their length, the free limbs of the outer segments slightly broader than and just overlapping those of the inner, the anthers sessile on the segments where thickening of the tissue suggests fusion with filaments. *Female flowers* rather longer, c. 5 mm, the ovary trilocular with a very short style and trifid stigma; *capsule* c. 8 mm long, the lower part wrinkled within the persistent perianth, almost smooth above, loculicidal, 3-ovulate and 3-seeded or often 1-seeded with two aborted ovules. *Seed* obovoid, attached to a central placenta near the base of the carpel, the micropyle adaxial near the seed's equator, when dry the testa glistening between slightly raised reticulae, when soaked almost smooth.

DISTRIBUTION (see fig. 1): tropical Australia from the Kimberley region of Western Australia to Arnhem Land and Groote Eylandt in the Northern Territory, north of lat. 17° S.

The species shows division, with some intergradation, into eastern and western races, treated here as subspecies.

Key to the Subspecies and a Related Taxon

1. Floral bracts pale, not discolouring markedly with age; flowers yellow, the perianth darkening to purplish black at or after anthesis; leaves flat to (slightly) concavo-convex, very fine to 3.5 mm broad, (19–) 25–45 (–55) cm long; leaf breadth: thickness ≥ 4:1, the chlorenchyma bands broad and ± X-shaped in T.S. (Fig. 2a, 2b). Tropical Australia from Western Australia (Kimberley) to Northern Territory (Gulf of Carpentaria). Flowering in Autumn ..... *L. tropica*
   a. Leaves long and broad so that plants appear coarse: leaves (1–) 2–2.5 (–3.5) mm broad; western part of the range ..... subsp. *tropica*
   b. Leaves long and narrow so that plants appear less dense: leaves 0.3–1.75 mm broad; eastern part of the range ..... subsp. *arnhemica*

1.* Floral bracts pale, becoming chestnut brown with age; flowers yellow, the perianth not darkening after anthesis; leaves usually distinctly plano-convex, (0.25–) 0.6–1.3 mm broad, (3–) 10–25 (–50) cm long; leaf breadth: thickness ≷ 3:1, the chlorenchyma bands narrower and ± inverted Y-shaped in T.S. (Fig. 2e). Southern Australia from south-west of Western Australia to western New South Wales. Flowering in Spring ..... *L. glauca* subsp. *collina*

a. L. tropica subsp. tropica

[*Xerotes elongata* sensu auct. non Benth.: W. V. Fitzgerald, J. & Proc. Roy. Soc. Western Australia 3: 127 (1916/7)].

["*Xerotes Brownii* F.v.M." sensu F. Mueller, Proc. Linn. Soc. New South Wales (Ser. 2) 6: 475 (1892)].

Diagnostic characters as given in the key.

* From Beard (1979)

DISTRIBUTION: Western part of the species' range—in the Western Australian Kimberley region extending eastward into the western part of the Darwin and Gulf District (Northern Territory); in sandy soils (recorded sometimes as 'granitic', 'red soil over laterite', 'on bauxite') of plateau or river bank, in palm and eucalypt woodland.

SPECIMENS EXAMINED: WESTERN AUSTRALIA: **Northern Province—Gardner:** Mitchell Plateau airfield, 14° 48′ S, 125° 48′ E, *Kenneally 7019*, 2.1979 (PERTH); Mitchell Plateau, W. Kimberley, palm woodland area on bauxite, *Kenneally 4901*, 6.1976 (PERTH); Mitchell Plateau, NW. Kimberley, palm woodland area on laterite, *Kenneally 4902*, 6.1976 (PERTH); near Dromaius Ck, Drysdale R. Natl. Park, c. 15° 16′ S, 126° 43′ E, *George s.n.*, 8.1975 (PERTH); Blyxa Ck, Prince Regent River Reserve, 15° 48′ S, 125° 20′ E, *George 12441*, 8.1974 (PERTH); Welcome Ck [vicinity Prince Regent R.], *Bradshaw & Allen NSW 50574*, 1891 (NSW); "Gibb R." near homestead, *Johnson 2089*, 8.1967 (NSW ♀); Isdell R.—base of Mts Rason & Daglish, of Tabletop Mtn—Calder R., *Fitzgerald NSW 81629*, recd. 9.1910 (NSW).

NORTHERN TERRITORY: **Darwin & Gulf District*:** "Munmalary Station", 12° 14′ S, 132° 35′ E, *Latz 3775*, 5.1973 (NSW); Pine Creek, *Byrnes 1322*, 1.1969 (DNA, K); Moyle R., Port Keats, *Robinson DNA 5132*, 9.1972 (DNA).

b. L. tropica subsp. **arnhemica** *A. Lee*, **subsp. nov.**

A subsp. *tropica* foliis angustioribus differt etsi crassitudine similibus.

HOLOTYPE: NORTHERN TERRITORY: **Darwin & Gulf District:** 113 km W. of Giddy R. crossing, 12° 22′ S, 136° 42′ E, *Symon 7751*, 6.1972 (NSW ♂ & ♀).

Diagnostic characters as given in the key.

DISTRIBUTION: eastern part of the species' range: in central and eastern Darwin & Gulf District, on sandy soil ('in open eucalypt forest', 'edge of sandy swamp area') from near sea level to top of the Arnhem plateau.

SPECIMENS EXAMINED: NORTHERN TERRITORY: **Darwin & Gulf District:** Elcho I., 11° 59′ S, 135° 43′ E, *Latz 6072*, 7.1975 (DNA, NSW); East Alligator R., 1 mile [1.6 km] E. of crossing, 12° 24′ S, 133° 01′ E, *Byrnes 825*, 5.1968 (DNA); approx. 4 miles [c. 6 km] E. of Mary R., Oenpelli road, *Byrnes 785*, 5.1968 (DNA); Kapalga, Ref. 0918, 12° 36′ S, 132° 25′ E, *Collins 232*, 2.1977 (DNA); Jabiru, 12° 40′ S, 132° 50′ E, *Dunlop 3282*, 2.1973 (DNA); Nourlangie Rock, 12° 52′ S, 132° 47′ E, *Fox 479*, 6.1974 (DNA); Mt Brockman, 12° 45′ S, 132° 57′ E, *Barnett & Azzopardi 11*, 2.1977 (DNA); Caledon Bay, *Byrnes 971*, 10.1968 (DNA); Sleisbeck, 13° 47′ S, 132° 49′ E, *Byrnes 1650*, 6.1969 (DNA); Alyangula, Groote Eylandt, 13° 51′ S, 136° 25′ E, *Levitt 308*, 6.1973 (DNA); 16 miles [26 km] N. of Wilton R. crossing, *Byrnes 2624*, 6.1972 (DNA).

This species differs from *L. glauca* (all subspecies) in its usually longer and broader inflorescence on a longer peduncle exceeding the overlapping bases of the leaves. Subsp. *tropica* is clearly distinct from all of *L. glauca*, but some specimens of subsp. *arnhemica* with relatively short peduncles are very similar to *L. glauca* subsp. *collina*. There is little to separate such plants other than their locality, though the leaf form (in a fresh or soaked out T.S.) appears to be distinctive (Fig. 2b, c): broad in relation to thickness and flat (or slightly concavo-convex in the narrowest leaves) with fewer veins per unit of width in *L. tropica* subsp. *arnhemica*, narrower in relation to thickness and plano-convex with more numerous veins in *L. glauca* subsp. *collina*. The blackening older flowers with pale bracts in *L. tropica* are shown in almost all the specimens where male flowers are present, while persistent yellow flower colour with brown bracts obtains in *L. glauca*; these characters will serve to separate most collections. Finally a Spring flowering indicates *L. glauca*, while *L. tropica* flowers in Autumn.

* From Chippendale, G.M. (1971: 209).

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